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29 December 1954

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MEMORANDUM FOR: THE RECORD

SUBJECT : Project Monitor _____
 _____ on Projects P-60B, P-102,
 P-103, P-109, P-93, P-139A, and P-155

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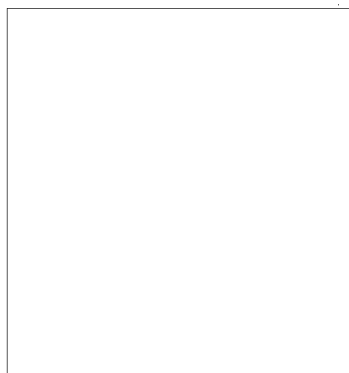
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1. Time and Place of Meeting:

The meeting was held 15 - 17 December 1954 at _____

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2. Attendance:

All projects
 All projects
 P-109, P-139A, P-93
 P-60B
 P-93, P-109
 P-93
 P-60B
 P-102, P-103
 All except P-155
 P-102, P-103

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3. Purpose of Meeting:

The purpose of this meeting was to review performance on all projects during the past 4 month period and to make necessary recommendations for future work.

a. P-60B Night Landing System, Ultraviolet

An authorization for an extension of time and money was hand-carried to _____. When examined the authorization was found to extend the task to 30 September 1954. This date was changed to 30 April 1954 and the extension was accepted as changed by _____

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It was agreed that _____ would do no work on the mobile energy source (ultraviolet floodlight) so they wrote a request to cancel that phase of the task and with the request for cancellation they requested additional funds which they estimate should be overly sufficient to complete the work on the auto-collimators.

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Work on

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Work on the autocollimators is scheduled to recommence immediately and be completed about 30 March 1955.

b. P-102,103 Transducers and Actuators, Indexing & Cataloging

The work during the past two months has been mainly concerned with setting up a system for the efficient production of the file cards. The most skilled personnel proved to be the most economical for the analysis of the commercial data sheets and tabulation on work sheets. They found that engineers could tabulate the information for about 7 cards per man per hour. The coding of the cards could be performed at the rate of 15 cards per man per hour. Typing 5 copies of each card was performed at the rate of 5 cards per girl per hour. The index will contain between 5,000 and 10,000 cards. The production will be limited by the number of men that can be assigned to the tabulation. It appears now that no more than three engineers can be assigned to the tabulation work, so the time required to produce 5,000 cards will be 3 months assuming each engineer works half time tabulating (3 to 4 hours per day is a maximum for this type of work). [] was instructed to complete as much of the index as possible and deliver it by the termination date of the contract (19 March 1955). The index to be delivered at that time can therefore be expected to contain less than 5,000 cards.

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[] was also instructed to provide a proposal for the next year's work by 19 February 1955. Included in next year's will be a list of instrument names with definitions.

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[] is now producing five copies of the index, one of which they will retain. These copies will be typed. If at a future date, additional copies are required, they will be produced by Multilith with a Xerograph master if the quantity permits.

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[] requested shipping instructions for the completed indices.

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c. P-109 Contact Microphone []

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The present status of the project was discussed. Presently, Southwest does not possess a microphone or audio accelerometer design which is equal to the one supplied by APD. Work is continuing on the various types of crystal units with various mass loadings in an attempt to improve sensitivity. Since the project monitor of August 1954, [] has not been permitted to make any response characteristic measurements on walls.

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Consequently,

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Consequently, the present efforts are directed toward developing an accelerometer with an essentially flat response 300 - 3000 cps similar to that of the APD furnished sample. The best [] experimental unit has approximately 1/2 the sensitivity of the sample in the 300 - 3000 cps range.

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There is some doubt whether building a microphone with a flat response is the best way in this application. Pre-emphasis to avoid noise and to make up for signal absorption may be desirable. A response designed to do these things can only be derived from a study of walls, their transmission and noise characteristics.

[] was requested to accomplish the following in the remaining 3-1/2 months of the project.

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(1) Continue the investigation of accelerometer mechanisms with an increased emphasis on electro-mechanical low impedance (30 - 50 Ω) devices. This investigation should concern itself with the sensitivity of the actual crystal or electromechanical transducer involved and not with the microphone or accelerometer as a whole.

(2) Write a final report on all work previously done. Emphasis should be placed on the results of the investigation of accelerometer mechanisms in the 10⁻¹ to 10⁻⁴ g range which has been recently expanded to include low impedance dynamic type units in (1) above. Emphasis should also be placed on what is known regarding wall noise and transmission characteristics and transducer-to-wall mounting techniques.

(3) Write and include with the final report a proposed course of action for future work to be done under a new task on the construction of a contact microphone. The whole problem should be logically considered from the sound source to the wall and its characteristics, to the mounting problem and the transducer itself. A proposal should be included.

d. P-93 Communication System, VLF, Ground Waves

The work done during the last two month period on noise characteristics above 2 kc was discussed. It was recommended by APD that further noise studies and examination of the transfer function be continued in the range 2 kc to d.c. It was pointed out that a maximum "chirp" noise level was known to exist in the region 1500 - 2500 cps.

In order

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In order to carry out the noise and transfer function measurements noted above, [] requested permission to buy a Liston-Becker Model 10A Amplifier (\$945). APD granted permission verbally and will expedite authorization by Contracts Branch.

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In order to learn more about the noise levels present at 2 kc and below [] personnel expressed a desire to visit [] APD agreed to set up a meeting for the week of 17 January. The [] personnel involved will be []

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[] was notified that it was desirable to terminate the study phase before the next monitor (15 February '55) so that a preliminary design conference might be held at that time. APD will provide a summary of desirable equipment characteristics for the conference.

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e. P-139A Chinese Telegraphic Decoder

The contract terminated on 15 December 1954, the day we arrived. The report was completed but within the past ten days [] had found two additional methods which they considered so good that they should be included in the report. Only a preliminary investigation of these two methods had been made. SWRI wanted to know if we wanted to extend the task for approximately one month to include these methods. We informed them that on the strength of our parallel project at the Bureau of Standards we did not want additional work done on this project. We, however, did approve a two week extension to edit and bind the report.

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f. P-155 Subminiature Recorder Study

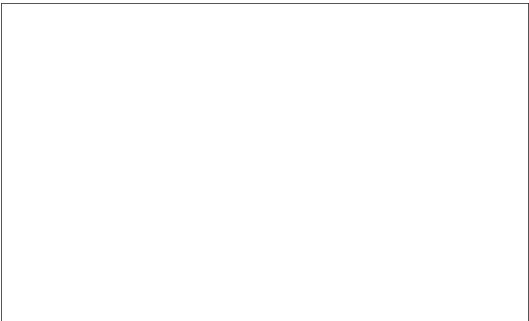
[] has been handling this project himself. He is conducting the study along the more fundamental line as described in his original proposal, which we did not accept, rather than the "state of the art" approach described in the accepted proposal. [] does not feel that a study along the "state of the art" approach would be worthwhile but he feels that a study based on fundamental physical principles is so important that he is going to continue along these lines. He would like to either cancel the task or change the task to allow him to work along these lines. He is still willing to perform the work as requested but does not feel that we will get our money's worth. We must either cancel the project, extend it as written, or change the requirement and extend the task.

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Distribution:

- Orig. - P-600
- ✓ - P-102
- 1 - P-103
- 1 - P-109
- 1 - P-93
- 1 - P-139A
- 1 - P-155
- 1 - Chrono



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